

5th International Conference and Exhibition on

Pharmaceutics & Novel Drug Delivery Systems

March 16-18, 2015 Crowne Plaza, Dubai, UAE

Pastillation technology based design and development of oral modified release multiparticulate drug delivery system

B Mishra

Indian Institute of Technology (Banaras Hindu University), India

Pastillation is a robust technology in chemical industry to convert hazardous chemical powders to solidified hemispherical pellets, called Pastilles using a large equipment called “rotoformer”. In this process the dusty chemicals are heated to convert them into a melt and then this melt is dropped on a cold surface to solidify the melt into pastilles. There are several pharmaceutical excipients, like waxes, lipids and PEGs, which can be liquefied by melting and then can be moulded into desired shape. Waxes and lipids are hydrophobic in nature and are being used to control the release of drugs in the aqueous gastric environment. On the other hand PEGs are water soluble drug carrier and can deliver the entrapped drug as soon as it comes in contact with GI fluids.

Considering above concept, we explored the possibility of utilizing pastillation technology in the design and development of oral modified release multiparticulate delivery system of Doxofylline, which can be used for the better treatment of asthma and COPD. We designed a small setup of laboratory scale to prepare the pastilles. Using this technology, issues like improved patient compliance with enhanced therapeutic efficacy of Doxofylline was addressed. Controlled release pastilles were prepared using lipids carrier for improving patient compliance. Whereas issue of enhanced therapeutic efficacy of doxofylline, specifically for the management of nocturnal asthma, was addressed by designing immediate release pastilles using PEG as drug carrier, which was further enteric coated to achieve the required drug release profile. The developed formulations were characterized for their physicochemical characteristics, in-vitro performance and *in-vivo* behaviour. The laboratory scale preparation of pastilles, experimental details and the findings will be presented in detail.

Biography

B.Mishra is currently working as Professor and Head at Department of Pharmaceutics, IIT (BHU), Varanasi, India. He is M.Pharm . PhD ,has 30 years of teaching and research experience, and is a reputed researcher in the area of rate controlled oral drug delivery systems including nano medicines. He has produced 12 Ph.D. ,50 M Pharm, and published around 170 research/review articles, written several book chapters and has h index - 25, i10 index-58, citations more than 2600, received various awards ,delivered several talks within India and outside. He has handled several research projects as well. Currently supervising 12 students for higher degree.

bmishra.phe@itbhu.ac.in